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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/222,846	12/30/1998	KAZUOMI OISHI	35.G2331	2585

5514 7590 11/26/2003

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EXAMINER	
MEISLAHN, DOUGLAS J	

ART UNIT	PAPER NUMBER
2132	25

DATE MAILED: 11/26/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/222,846	OISHI, KAZUOMI	
	Examiner	Art Unit	
	Douglas J. Meislahn	2132	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *29 October 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-3,6,7,10-14,18-20 and 22* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3,6,7,10-14,18-20 and 22* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

13)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

a) ☐ The translation of the foreign language provisional application has been received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Response to Amendment

1. This action is in response to the request for reconsideration filed 29 October 2003 as well as the after-final amendment filed 22 August 2003 and entered by the RCE filed 29 October 2003. Claims 1, 10, 14, 18, 20, and 22 were amended by the after-final amendment.

Response to Arguments

2. Applicant's request for reconsideration rebutted to the advisory action's charge of new subject matter. The claim language in question was "before . . . outputting" (claim 1, for example). Although this specific language is apparently absent from the specification, applicant's commentary has convinced the examiner that the feature falls within the scope of the disclosure. The statement that "those skilled in the art would readily understand that the encrypted digital information can be output at any time . . ." shows that applicant too appreciates, and implicitly agrees with the examiner's opinion of, the scope of the disclosure.

3. Applicant's arguments with respect to the art rejections of claims 1-3, 6, 7, 10-14, 18-20, and 22 have been considered but are moot in view of the new ground(s) of rejection. Elements of the claims missing in Hickman et al. are rendered obvious by secondary references. Please note that the language of the secondary reference, Ryan, Jr. et al., mirrors words used by applicant to describe the instant invention ("Figure 3 explicitly erases the key *immediately* after the information is encrypted . . ." - lines 10-11 on page 2 of paper 24, emphasis added; "*Immediately* after performing the

requested function, . . . the unencrypted version of the key is erased . . ." – lines 29-33 of column 4 in US 6192473 B1, emphasis added.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 10-13 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

6. Claim 10 recites the limitation "said stored encryption key" in the first line of the last clause. There is insufficient antecedent basis for this limitation in the claim. Change "said" to "the".

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. Claims 1, 3, 6, 10, and 12-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hickman et al. (5619025) in view of Ryan, Jr. et al. (6192473).

In the first paragraph of column 5, Hickman et al. show the use of image data as an encryption key. As detailed in their previous paragraph, this image data is collected from a document. The document reads on applicant's external source, while collection of data mandates reading means. Use of the image as an encryption key requires

storage of the encryption key and encryption means to perform the actual encryption. The encrypted data is sent to an electronic database, which necessitates output means. Hickman et al. do not require the encryption key to be erased before the encrypted material is transmitted. In lines 29-35 of column 4, Ryan, Jr. et al. teach improving security by erasing encryption keys "[i]mmediately" after their use. Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to improve security by erasing the encryption keys used in Hickman et al., as taught by Ryan, Jr. et al.

9. Claims 2 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hickman et al. in view of Ryan, Jr. et al. (6192473) as applied to claims 1 and 10 above.

Hickman et al. and Ryan, Jr. et al. show a key being read from an external source, used to encrypt a document, and deleted upon transmittal of the encrypted document. They do not say that the encrypted data had undergone a high-efficiency coding operation prior to encryption. Official notice is taken that it is old and well-known to subject data to high-efficiency coding operations as a way to reduce the size of the data. Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to subject the to-be-encrypted data in Hickman et al. to a high-efficiency coding operation in order to reduce the amount of raw data that needs to be encrypted and transmitted.

10. Claims 7, 18-20, and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hickman et al. in view of Ryan, Jr. et al. (6192473) as applied to claim 1 above and further in view of Schneier (*Applied Cryptography*).

Hickman et al. and Ryan, Jr. et al. show a key being read from an external source, used to encrypt a document, and deleted upon encryption of the document. With respect to claim 7, they do not say that the encryption key is based on a public key cryptosystem. On page 48, Schneier teaches encrypting messages with a key based on a public key cryptosystem. This system allows anyone to have the power to encrypt, but only one entity to have the power to decrypt. Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made for the encryption key in Hickman et al. to be a public key so that either only one entity could decrypt encrypted message or only one entity could have encrypted (by decryption) the message.

With respect to claims 18-20 and 22, they do not say that the document is actually encrypted by a second key while the key read from the external source is used to encrypt the second key. On page 176, Schneier teaches key-encryption keys and mentions that they should be distributed manually. On page 184, Schneier talks about how key-encryption keys are seldom distributed and are used to generate little ciphertext. Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to use the keys on Hickman et al.'s external source as a key-encryption key, thus generating a minimal amount of ciphertext with the key, which reduces the benefit of replacing the key. Thus, the external source would have a longer feasible lifetime. With respect to claim 19, Schneier teaches encrypting a symmetric key with a recipient's public key on page 51; that is, the key-encryption key is from a public-key cryptosystem.

11. Claims 1, 6, 10, 13, and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Laing et al. (5534857) in view of Ryan, Jr. et al. (6192473).

In lines 18-20 of column 9, Laing et al. disclose enciphering a random number with a key that has been read from a smart card. The smart card is an external source. Reading means are inherent for the reading step. As such the first clause of claim 1 is rendered obvious. Storage means for the encryption key are inherent because the key must be stored in order to be used. Thus, the second clause of the first claim is met. In lines 21-23 of the same column, the encrypted random number is transmitted, which renders obvious output means and the third clause of claim 1. Laing et al. do not require the encryption key to be erased before the encrypted material is transmitted. In lines 29-35 of column 4, Ryan, Jr. et al. teach improving security by erasing encryption keys "[i]mmediately" after their use. Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to improve security by erasing the encryption keys used to encrypt the random number in Laing et al., as taught by Ryan, Jr. et al.

Claims 6 and 13 are rendered obvious by lines 24-35 of column 9 in Laing et al. Claim 10 is rendered obvious because it is a method for the means of claim 1 and claim 14 because it is a computer readable medium with instructions for performing the steps of claim 10.

12. Claims 2 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Laing et al. in view of Ryan, Jr. et al. (6192473).

Laing et al. and Ryan, Jr. et al. show a key being read from a smart card and being used to encrypt a random number. They do not say that the encrypted data had undergone a high-efficiency coding operation prior to encryption. Official notice is taken that it is old and well-known to subject data to high-efficiency coding operations as a way to reduce the size of the data. Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to subject the to-be-encrypted data in Laing et al. to a high-efficiency coding operation in order to reduce the amount of raw data that needs to be encrypted and transmitted.

13. Claims 3 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Laing et al. in view of Ryan, Jr. et al. as applied to claims 1 and 10 above.

Laing et al. and Ryan, Jr. et al. show a key being read from a smart card and being used to encrypt a random number. They do not say that a scanner is attached to their system. Official notice is taken that it is old and well-known to attach scanners to computer systems, thereby letting the system scan documents and pictures. Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to add a scanner to the system of Laing et al. and Ryan, Jr. et al.

14. Claims 7, 18-20, and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Laing et al. in view of Ryan, Jr. et al. (6192473) as applied to claim 1 above and further in view of Schneier (*Applied Cryptography*).

Laing et al. and Ryan, Jr. et al. show a key being read from a smart card and being used to encrypt a random number. With respect to claim 7, they do not say that the encryption key is based on a public key cryptosystem. On page 48, Schneier

teaches encrypting messages with a key based on a public key cryptosystem. This system allows anyone to have the power to encrypt, but only one entity to have the power to decrypt. Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made for the encryption key in Laing et al. to be a public key so that either only one entity could decrypt encrypted message or only one entity could have encrypted (by decryption) the message.

With respect to claims 18-20 and 22, they do not say that the random number is actually encrypted by a second key while the key read from the external source is used to encrypt the second key. On page 176, Schneier teaches key-encryption keys and mentions that they should be distributed manually. On page 184, Schneier talks about how key-encryption keys are seldom distributed and are used to generate little ciphertext. Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to use the key on Laing et al.'s smart card as a key-encryption key, thus generating a minimal amount of ciphertext with the key, which reduces the benefit of replacing the key. Thus, the external source would have a longer feasible lifetime. With respect to claim 19, Schneier teaches encrypting a symmetric key with a recipient's public key on page 51; that is, the key-encryption key is from a public-key cryptosystem.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Douglas J. Meislahn whose telephone number is (703)

305-1338. The examiner can normally be reached on between 9 AM and 6 PM, Monday through Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gilberto Barrón can be reached on (703) 305-1830. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

Douglas J. Meislahn
Examiner
Art Unit 2132

DJM